

ABSTRACT OF THE DISCLOSURE

[A method of cleaning a dual damascene structure. A first metal layer, a cap layer, and a dielectric layer are formed on a substrate in sequence. Then] a dual damascene opening is formed in the dielectric layer and the cap layer, exposing the first metal layer. ^{and} [Then,] a post-etching cleaning step is carried out to clean the dual damascene opening, ^{by} [and there are] two types of cleaning methods. The first method uses a fluorine-based solvent to clean the dual damascene opening. An alternative cleaning method uses a hydrogen peroxide based solvent at a high temperature, followed by a hydrofluoric acid solvent cleaning step. Then, an argon gas plasma is sputtered to clean the dual damascene opening before a second metal layer fills in the dual damascene opening.

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